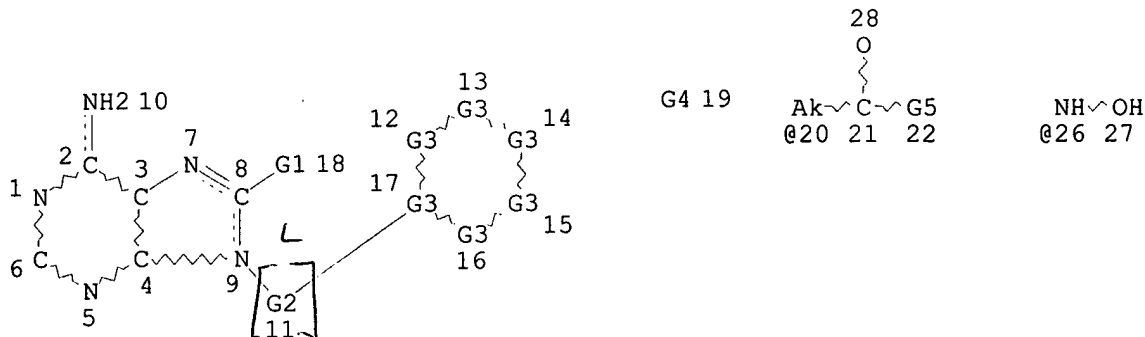


Buch

=> d 124 que stat;d 1-14 ide cbib abs;fil caol;s 124  
 L10 SCR 1840  
 L12 SCR 1841  
 L17 STR



O~C~G5  
 23 @24 25

Page 1-A

O~G6  
 @29 30

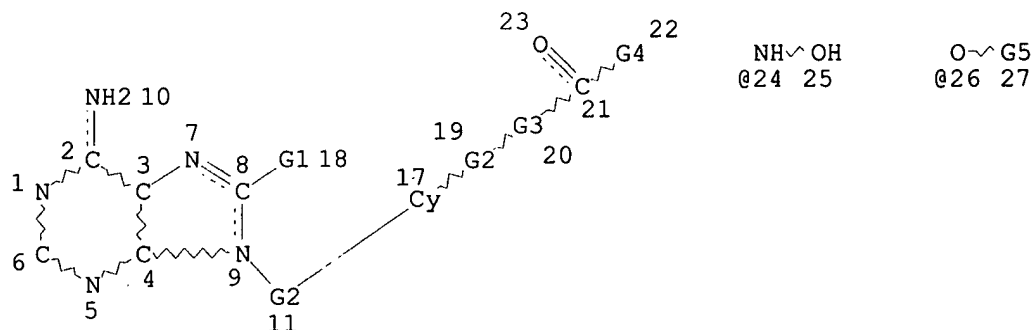
Page 2-A

VAR G1=H/ME  
 L= REP G2=(0-10) A  
 VAR G3=C/O/N  
 VAR G4=20/24  
 VAR G5=26/OH/29  
 VAR G6=C/SI

NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE  
 L18 STR



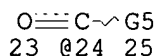
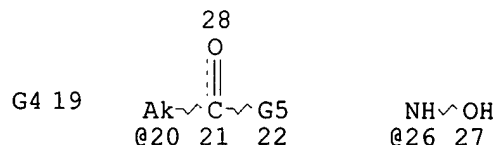
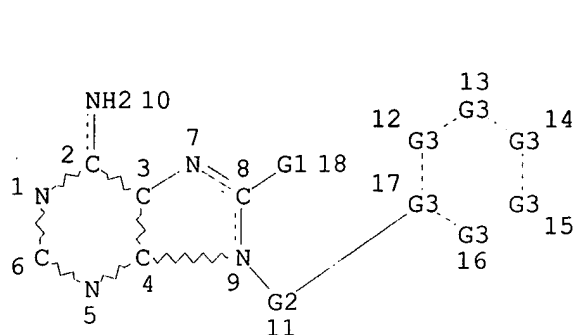
VAR G1=H/ME  
 REP G2=(0-10) A  
 REP G3=(0-4) CH2  
 VAR G4=24/OH/26

Searched by: Mary Hale 308-4258 CM-1 1E01

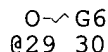
VAR G5=C/SI  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE  
 L19 STR



Page 1-A



Page 2-A

VAR G1=H/ME  
 REP G2=(0-10) A  
 VAR G3=C/O/N  
 VAR G4=20/24  
 VAR G5=26/OH/29  
 VAR G6=C/SI  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L21 39 SEA FILE=REGISTRY SSS FUL L17 AND L18 NOT L19  
 L22 39 SEA FILE=REGISTRY SUB=L21 SSS FUL L10  
 L23 25 SEA FILE=REGISTRY SUB=L22 SSS FUL L12  
 L24 14 SEA FILE=REGISTRY ABB=ON PLU=ON L22 NOT L23

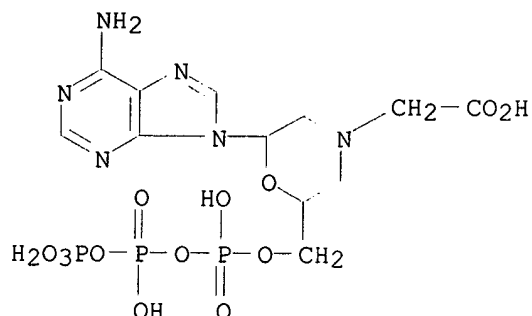
L24 ANSWER 1 OF 14 REGISTRY COPYRIGHT 2002 ACS

RN 289639-30-1 REGISTRY

CN 4-Morpholineacetic acid, 2-(6-amino-9H-purin-9-yl)-6-(3,5,7,7-tetrahydroxy-3,5,7-trioxido-2,4,6-trioxa-3,5,7-triphosphahept-1-yl)- (9CI) (CA INDEX

Searched by: Mary Hale 308-4258 CM-1 1E01

NAME)  
 FS 3D CONCORD  
 MF C12 H19 N6 O13 P3  
 SR CA  
 LC STN Files: CA, CAPLUS, CASREACT

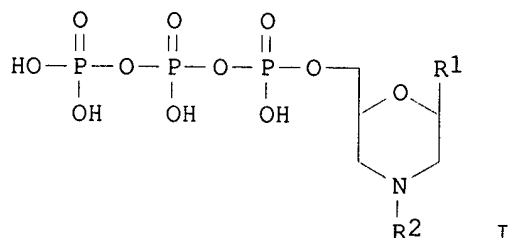


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:190215 Methods for making morpholino-nucleotides, and their use for analyzing and marking nucleic acid sequences. Marciacq, Florence; Sauvaigo, Sylvie; Mouret, Jean-Francois; Issartel, Jean-Paul; Molko, Didier (Commissariat A L'Energie Atomique, Fr.; Centre National De La Recherche Scientifique). PCT Int. Appl. WO 2000050626 A1 20000831, 73 pp. DESIGNATED STATES: W: CA, JP, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (French). CODEN: PIXXD2. APPLICATION: WO 2000-FR427 20000221. PRIORITY: FR 1999-2170 19990222; FR 1999-12001 19990927.

GI



AB The invention concerns the use of morpholino-nucleosides of formula (I) wherein: R1 represents a nucleic base and R2 represents a group corresponding to the following formulas:  $-(CH_2)_n-NH_2$ ,  $-(CH_2)_n-SH$ ,  $-(CH_2)_n-COOH$ ,  $-(CH_2)_n-OH$ ,  $-(CH_2)_n-NH-R_3$ ,  $(CH_2)_n-SR_3-(CH_2)_n-CO-R_3$ ,  $-(CH_2)_n-OR_3$  wherein: n is an integer ranging from 1 to 12 and R3 is a group derived from a marker, a protein, an enzyme, a fatty acid or a peptide, as chain terminators in a DNA or RNA sequencing process by Sanger method, or for marking DNA or RNA fragments.

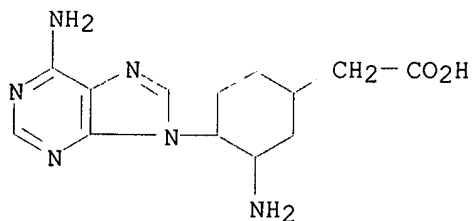
L24 ANSWER 2 OF 14 REGISTRY COPYRIGHT 2002 ACS

RN 221301-98-0 REGISTRY

CN Cyclohexaneacetic acid, 3-amino-4-(6-amino-9H-purin-9-yl)- (9CI) (CA

Searched by: Mary Hale 308-4258 CM-1 1E01

INDEX NAME)  
 FS 3D CONCORD  
 MF C13 H18 N6 O2  
 SR CA  
 LC STN Files: CA, CAPLUS

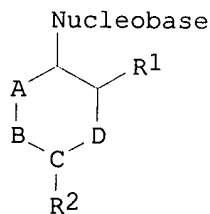


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:252610 Method for producing cyclohexyl and heterocyclyl nucleoside derivs. and oligomers and their use in pairing or testing systems. Miculka, Christian; Windhab, Norbert; Eschenmoser, Albert; Scherer, Stefan; Quinkert, Gerhard (Aventis Research & Technologies G.m.b.H. & Co. K.-G., Germany). PCT Int. Appl. WO 9915509 A2 19990401, 43 pp. DESIGNATED STATES: W: AU, BR, CA, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1998-EP6002 19980921. PRIORITY: DE 1997-19741739 19970922.

GI



I

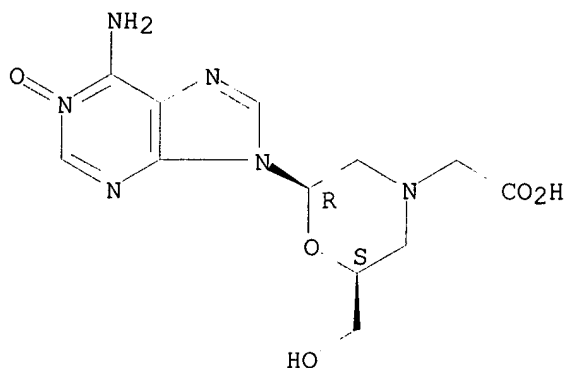
AB The invention relates to a compd. of formula (I), wherein R1 is NR3R4, OR3 or SR3 with R3 and R4 being H or CnH2n+1 independently of each other and being the same or different, n being a whole no. from 1 to 12; R2 is equal to CmH2m-C(X)-Y with X being =O, =S or =N, Y being equal to OR3, NR3R4 or SR3, R3 and R4 having the same meaning given above, and m being a whole no. from 1 to 4; or R2 is equal to CmH2m-Z-Y' with Z being a sulfonyl, phosphonyl, ether or amine group, Y' being equal to H, CnH2n+1, OR3, NR3R4 or SR3 then Z is sulfonyl or phosphonyl group, n, R3 and R4 having the meaning given above, and Y' being equal to CnH2n+1 when Z is an ether or an amine group; A, B, and D are the same or different and mean CR5R6, O, NR7 or S independently of each other with R5, R6 and R7 being H or CnH2n+1, independently of each other, n having the meaning given above; and C is equal to CR8 or N with R8 having the meaning of R5 independently, A-B, B-C or C-D not being two identical hetero-atoms; and nucleobase means thymine, uracil, adenine, cytosine, guanine, iso-cytosine, iso-guanine, xanthine or hypoxanthine. The invention also relates to a method for

Searched by: Mary Hale 308-4258 CM-1 1E01

producing these derivs. and to their use in pairing and/or testing systems. These compds. are of interest because they form the building units of cyclohexylnucleooligoamides (CNAs), which have the ability to base-pair with natural DNAs or RNAs, without the steric considerations posed by the ribo- or deoxy-ribo-furan rings of natural (deoxy)nucleic acids. Thus, (S,S,S)-2-iodo-8-aza[3.3.1]nonan-7-one was reacted with 3-(benzyloxy)methyl-thymine, to yield, after a series of protection/deprotection steps, I [A, B, D = CH<sub>2</sub>; C = (S)-CH; Nucleobase = thymine; R<sub>1</sub> = (S)-BOC-NH; R<sub>2</sub> = (S)-CH<sub>2</sub>CO<sub>2</sub>H (II)]. Using II and the adenine-base equiv., CNAs up to hexamers were synthesized using solid-phase techniques, and their self-complimentary base-pairing strength was measured.

L24 ANSWER 3 OF 14 REGISTRY COPYRIGHT 2002 ACS  
 RN 215739-45-0 REGISTRY  
 CN 4-Morpholineacetic acid, 2-(6-amino-1-oxido-9H-purin-9-yl)-6-(hydroxymethyl)-, (2R,6S)- (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C12 H16 N6 O5  
 SR CA  
 LC STN Files: CA, CAPLUS, TOXCENTER

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

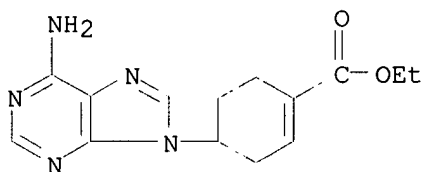
REFERENCE 1: 130:1269 Polyclonal Antibodies to Adenine N1-Oxide: Characterization and Use for the Measurement of DNA Damage. Signorini, Nathalie; Molko, Didier; Cadet, Jean (Departement de Recherche Fondamentale sur la Matiere Condensee Service de Chimie Inorganique et Biologique Laboratoire des Lesions des Acides Nucleiques, CEA/Grenoble, Grenoble, F-38054, Fr.). Chemical Research in Toxicology, 11(10), 1169-1175 (English) 1998. CODEN: CRTOEC. ISSN: 0893-228X. Publisher: American Chemical Society.

AB Adenine N1-oxide is a DNA lesion whose formation involves the specific oxidn. of the adenine base by hydrogen peroxide under nonradical conditions. The damage may be measured using a HPLC/32P-postlabeling method, which however cannot be used for routine anal. We propose herein as an alternative an immunol. assay which allows a rapid evaluation of the level of adenine N1-oxide in DNA exposed to oxidative stress. Two polyclonal antibodies were raised using two different strategies for the coupling of the hapten to the protein. The first approach is based on the universal method of Erlanger and Beiser, whereas the prepn. of the second

Searched by: Mary Hale 308-4258 CM-1 1E01

antigen involves the conjugation of a morpholino deriv. of adenosine N1-oxide to the carrier protein. The affinity and the specificity of those antibodies were detd. by competitive ELISA. The antibody obtained by the traditional method shows some cross-reactivity with normal nucleotides, whereas for the other antiserum, the selectivity was found to be higher. Therefore, this polyclonal antibody was used to quantify the level of adenine N1-oxide in calf thymus DNA oxidized either by m-chloroperbenzoic acid or by hydrogen peroxide. The detection limit of the assay is four residues of adenine N1-oxide per 106 normal bases. The level of adenine N1-oxide in nonmodified DNA was lower than the detection limit of the assay, whereas in mCPB- and H2O2-modified DNA, it could be up to 14 and 0.7 adenine N1-oxide residues per 104 normal bases, resp.

L24 ANSWER 4 OF 14 REGISTRY COPYRIGHT 2002 ACS  
 RN 188949-70-4 REGISTRY  
 CN 1-Cyclohexene-1-carboxylic acid, 4-(6-amino-9H-purin-9-yl)-, ethyl ester (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C14 H17 N5 O2  
 SR CA  
 LC STN Files: CA, CAPLUS



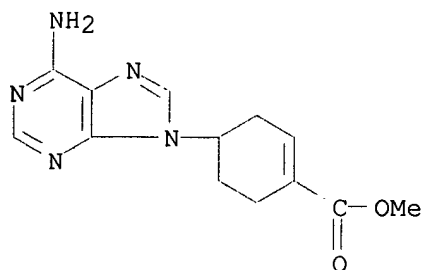
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 126:277684 Synthesis and Conformational Study of 3-Hydroxy-4-(Hydroxymethyl)-1-Cyclohexanyl Purines and Pyrimidines. Maurinsh, Yuris; Schraml, Jan; De Winter, Hans; Blaton, Norbert; Peeters, Oswald; Lescrinier, Eveline; Rozenski, Jef; Van Aerschot, Arthur; De Clercq, Erik; Busson, Roger; Herdewijn, Piet (Rega Institute for Medical Research, Louvain, B-3000, Belg.). Journal of Organic Chemistry, 62(9), 2861-2871 (English) 1997. CODEN: JOCEAH. ISSN: 0022-3263. Publisher: American Chemical Society.

AB The cyclohexane nucleosides with a 1,4-relationship between nucleoside base and hydroxymethyl moiety were synthesized using a conjugated addn. reaction of the nucleobases to Et 1,3-cyclohexadiene-1-carboxylate and hydroboration of the cyclohexenyl precursor. The lack of antiviral activity of the compds. was correlated with the conformation of these nucleosides as deduced from NMR and X-ray anal.

L24 ANSWER 5 OF 14 REGISTRY COPYRIGHT 2002 ACS  
 RN 152388-42-6 REGISTRY  
 CN 1-Cyclohexene-1-carboxylic acid, 4-(6-amino-9H-purin-9-yl)-, methyl ester (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C13 H15 N5 O2  
 SR CA  
 LC STN Files: CA, CAPLUS

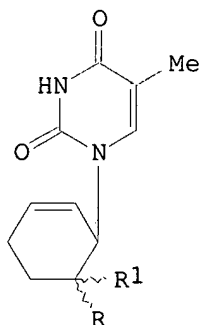


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 120:77582 Cyclohexenyl nucleosides and related compounds.  
Arango, J. H.; Geer, A.; Rodriguez, J.; Young, P. E.; Scheiner, P. (York Coll., City Univ. New York, Jamaica, NY, 11451, USA). Nucleosides Nucleotides, 12(7), 773-84 (English) 1993. CODEN: NUNUD5. ISSN: 0732-8311.

GI



I

AB Cis and trans-1-(4-hydroxy-2-cyclohexenyl)- and 1-(2-hydroxy-5-cyclohexenyl)thymines, e.g. I (R = H, R1 = OH) (II), were obtained by stereospecific routes. Oxidn. of II afforded I (RR1 = O), the carbocyclic analog of a reportedly antiviral ketopyranosyl nucleoside. Michael-type addn. provided a direct route to 3-oxocycloalkyl nucleosides, and lactone nucleosides resulted from addn. of bases to .alpha.-methylene-.gamma.-butyrolactone. Anti-HIV screening (no data) revealed no activity for the new compds.

L24 ANSWER 6 OF 14 REGISTRY COPYRIGHT 2002 ACS

RN 99234-90-9 REGISTRY

CN 4-Morpholineacetic acid, 2-(6-amino-9H-purin-9-yl)-6-(hydroxymethyl)-, (2R,6S)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 4-Morpholineacetic acid, 2-(6-amino-9H-purin-9-yl)-6-(hydroxymethyl)-, (2R-cis)-

FS STEREOSEARCH

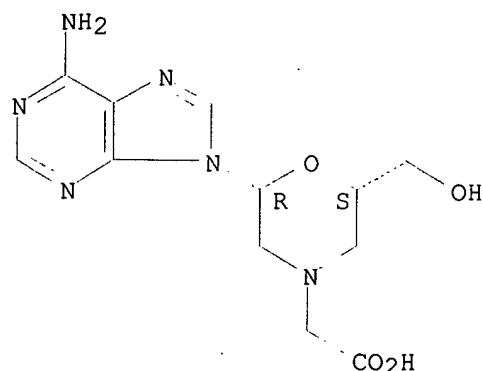
MF C12 H16 N6 O4

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER

Searched by: Mary Hale 308-4258 CM-1 1E01

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1967 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

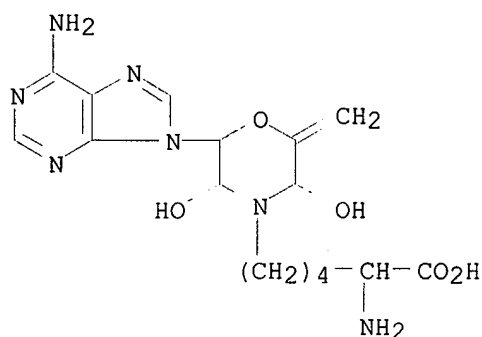
- REFERENCE 1: 130:1269 Polyclonal Antibodies to Adenine N1-Oxide: Characterization and Use for the Measurement of DNA Damage. Signorini, Nathalie; Molko, Didier; Cadet, Jean (Departement de Recherche Fondamentale sur la Matiere Condensee Service de Chimie Inorganique et Biologique Laboratoire des Lisions des Acides Nucleiques, CEA/Grenoble, Grenoble, F-38054, Fr.). Chemical Research in Toxicology, 11(10), 1169-1175 (English) 1998. CODEN: CRTOEC. ISSN: 0893-228X. Publisher: American Chemical Society.
- AB Adenine N1-oxide is a DNA lesion whose formation involves the specific oxidn. of the adenine base by hydrogen peroxide under nonradical conditions. The damage may be measured using a HPLC/32P-postlabeling method, which however cannot be used for routine anal. We propose herein as an alternative an immunol. assay which allows a rapid evaluation of the level of adenine N1-oxide in DNA exposed to oxidative stress. Two polyclonal antibodies were raised using two different strategies for the coupling of the hapten to the protein. The first approach is based on the universal method of Erlanger and Beiser, whereas the prepn. of the second antigen involves the conjugation of a morpholino deriv. of adenosine N1-oxide to the carrier protein. The affinity and the specificity of those antibodies were detd. by competitive ELISA. The antibody obtained by the traditional method shows some cross-reactivity with normal nucleotides, whereas for the other antiserum, the selectivity was found to be higher. Therefore, this polyclonal antibody was used to quantify the level of adenine N1-oxide in calf thymus DNA oxidized either by m-chloroperbenzoic acid or by hydrogen peroxide. The detection limit of the assay is four residues of adenine N1-oxide per 106 normal bases. The level of adenine N1-oxide in nonmodified DNA was lower than the detection limit of the assay, whereas in mCPB- and H2O2-modified DNA, it could be up to 14 and 0.7 adenine N1-oxide residues per 104 normal bases, resp.
- REFERENCE 2: 103:210401 Reductive alkylation with oxidized nucleotides. Use in affinity labeling or affinity chromatography. Rayford, Richard; Anthony, Donald D., Jr.; O'Neill, Robert E., Jr.; Merrick, William C. (Sch. Med., Case Western Reserve Univ., Cleveland, OH, 44106, USA). J. Biol. Chem., 260(29), 15708-13 (English) 1985. CODEN: JBCHA3. ISSN: 0021-9258.
- AB A study was made of the products of a reaction of oxidized ribonucleotides with a primary amine. As a model reaction, IO4--oxidized adenosine was combined with glycine in the presence of NaCNBH3. The purified major

Searched by: Mary Hale 308-4258 CM-1 1E01



product of this reaction, adenine 9,2'-(4'-carboxymethyl-6'-hydroxymethylmorpholine), was characterized by <sup>13</sup>C and <sup>1</sup>H NMR spectroscopy, UV spectroscopy, and TLC. When used to generate affinity columns, oxidized adenosine or oxidized ATP formed stable products with immobilized diaminoethane when treated with NaCNBH<sub>3</sub>. Failure to treat with NaCNBH<sub>3</sub> yielded an unstable affinity matrix. These results are used in the interpretation of differing results when oxidized nucleotides have been used as affinity labels for different proteins.

L24 ANSWER 7 OF 14 REGISTRY COPYRIGHT 2002 ACS  
 RN 84560-16-7 REGISTRY  
 CN 4-Morpholinehexanoic acid, .alpha.-amino-2-(6-amino-9H-purin-9-yl)-3,5-dihydroxy-6-methylene- (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C16 H23 N7 O5  
 LC STN Files: CA, CAPLUS



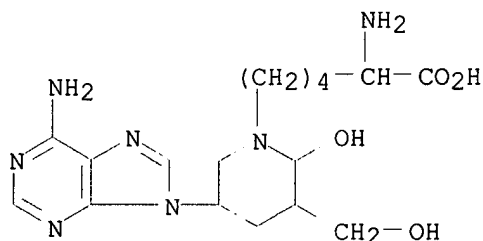
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

- REFERENCE 1: 98:121988 Affinity labeling of nicotinamide adenine dinucleotide-dependent isocitrate dehydrogenase by the 2',3'-dialdehyde derivative of adenosine 5'-diphosphate. Evidence for the formation of an unusual reaction product. King, Marita M.; Colman, Roberta F. (Dep. Chem., Univ. Delaware, Newark, DE, 19711, USA). Biochemistry, 22(7), 1656-65 (English) 1983. CODEN: BICHAW. ISSN: 0006-2960.
- AB Modification of pig heart NAD-dependent isocitrate dehydrogenase (I) by the 2',3'-dialdehyde deriv. of ADP (II) resulted in a time-dependent inactivation of the enzyme. Two kinetically distinct phases were obsd. for the loss in I activity with max. rate consts. of 0.38 and 0.023 min<sup>-1</sup>, at satg. concns. of II, at pH 7.0 and in the presence of 2.0 mM MnSO<sub>4</sub>. The K<sub>i</sub> values for both phases of the reaction were very similar; an av. of 22.9 .mu.M for free II was obtained with consts. detd. in the presence of 0.2, 0.3, and 2.0 mM MnSO<sub>4</sub>. At pH 7.0 and in the presence of Mn<sup>2+</sup>, almost complete protection of I from inactivation by II was provided by ADP and isocitrate, whereas only partial protection was afforded by NADH and ATP; NAD was without effect. Only the protection by ADP was consistent with its directly detd. binding const. which may indicate that isocitrate, NADH, and ATP exert allosteric effects on the inactivation by II, whereas ADP may compete with II for the same nucleotide-binding site. Affinity labeling of I with [<sup>14</sup>C]II resulted in radioactive labeling of the 3 distinct subunits. The incorporation of .apprx.1 mol [<sup>14</sup>C]II/mol av. subunit corresponded to total inactivation of I. Inactivation of I by II resulted in the formation of a I-II product that was unaffected by

subsequent reaction with NaBH<sub>4</sub> which suggests that the reaction product with I was not the generally expected Schiff base. Formation of the relatively stable product involved a loss of the pyrophosphoryl group of II as demonstrated by a comparison of the stoichiometry of the reaction detd. with [14C]II and [32P]II. Further evidence obtained in this study was consistent with the formation of a 4',5'-didehydro-2',3'-dihydroxymorpholino deriv. between II and the .epsilon.-amino group of lysine on I. The results suggest that an allosteric site for ADP is present on each type of I subunit and that the structurally distinct subunits may be functionally similar.

L24 ANSWER 8 OF 14 REGISTRY COPYRIGHT 2002 ACS  
 RN 71904-78-4 REGISTRY  
 CN 1-Piperidinehexanoic acid, .alpha.-amino-5-(6-amino-9H-purin-9-yl)-2-hydroxy-3-(hydroxymethyl)- (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C17 H27 N7 O4  
 LC STN Files: CA, CAPLUS, TOXCENTER

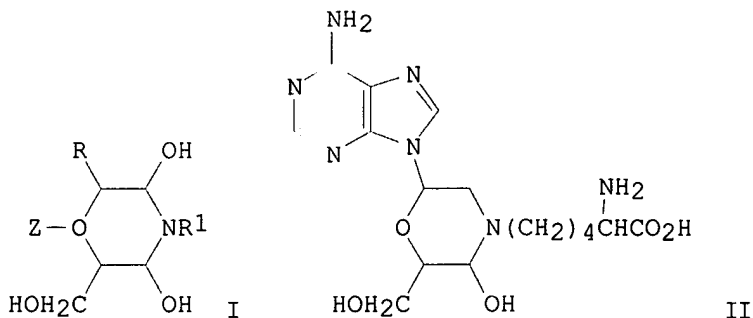


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 91:193337 Nucleic acid base derivatives. Akimoto, Hiroshi; Kasai, Yoshio; Nomura, Yasuo (Takeda Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 54061185 19790517 Showa, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1977-128519 19771025.

GI



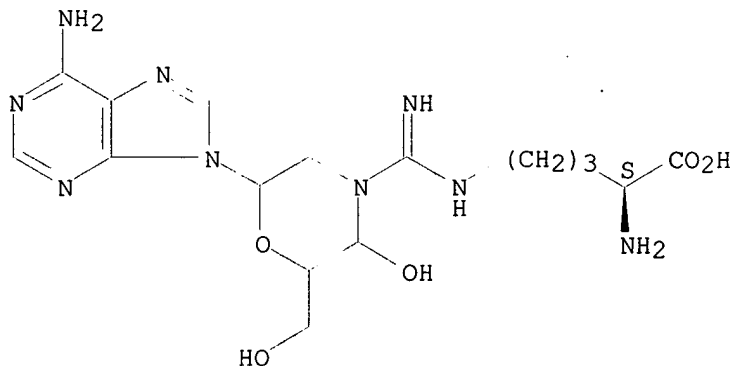
AB Title derivs. I [R, R1, Z = adenine-9, (CH<sub>2</sub>)<sub>4</sub>CH(NH<sub>2</sub>)CO<sub>2</sub>H (Q), O (II); hypoxanthine-9, Q, O; adenine-9, C(:NH)NH(CH<sub>2</sub>)<sub>3</sub>CH(NH<sub>2</sub>)CO<sub>2</sub>H, O; adenine-9, Q, CH<sub>2</sub>; cytosine-1, Q, O] were prepd. by treating OHCCHROCH(CH<sub>2</sub>OH)CHO with lysine or arginine. Anticarcinogenic data of I were given in mice against

Searched by: Mary Hale 308-4258 CM-1 1E01

P388 tumor cells. Thus, stirring 1.068 g adenosine and 856 mg NaIO<sub>4</sub> 1 h at room temp. and then treating with 584 mg L-lysine 4 h gave, after lyophilization, 1.65 g II.

L24 ANSWER 9 OF 14 REGISTRY COPYRIGHT 2002 ACS  
 RN 71904-77-3 REGISTRY  
 CN L-Ornithine, N5-[[6-(6-amino-9H-purin-9-yl)-3-hydroxy-2-(hydroxymethyl)-4-morpholinyl]iminomethyl]- (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C16 H25 N9 O5  
 LC STN Files: CA, CAPLUS, TOXCENTER

Absolute stereochemistry.

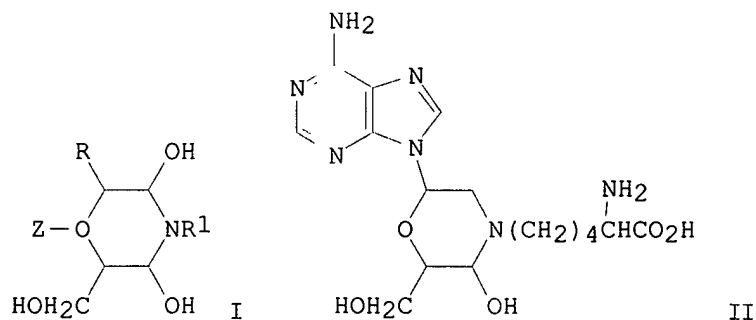


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 91:193337 Nucleic acid base derivatives. Akimoto, Hiroshi; Kasai, Yoshio; Nomura, Yasuo (Takeda Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 54061185 19790517 Showa, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1977-128519 19771025.

GI

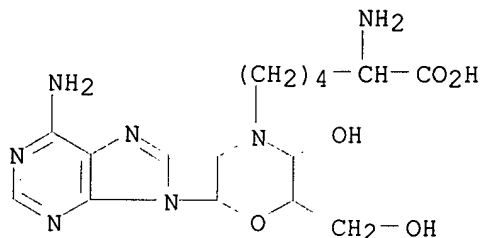


AB Title derivs. I [R, R1, Z = adenine-9, (CH<sub>2</sub>)<sub>4</sub>CH(NH<sub>2</sub>)CO<sub>2</sub>H (Q), O (II); hypoxanthine-9, Q, O; adenine-9, C(:NH)NH(CH<sub>2</sub>)<sub>3</sub>CH(NH<sub>2</sub>)CO<sub>2</sub>H, O; adenine-9, Q, CH<sub>2</sub>; cytosine-1, Q, O] were prepd. by treating OHCCHROCH(CH<sub>2</sub>OH)CHO with lysine or arginine. Anticarcinogenic data of I were given in mice against P388 tumor cells. Thus, stirring 1.068 g adenosine and 856 mg NaIO<sub>4</sub> 1 h at room temp. and then treating with 584 mg L-lysine 4 h gave, after

Searched by: Mary Hale 308-4258 CM-1 1E01

lyophilization, 1.65 g II.

L24 ANSWER 10 OF 14 REGISTRY COPYRIGHT 2002 ACS  
RN 71904-75-1 REGISTRY  
CN 4-Morpholinehexanoic acid, .alpha.-amino-6-(6-amino-9H-purin-9-yl)-3-  
hydroxy-2-(hydroxymethyl)- (9CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C16 H25 N7 O5  
LC STN Files: CA, CAPLUS, TOXCENTER

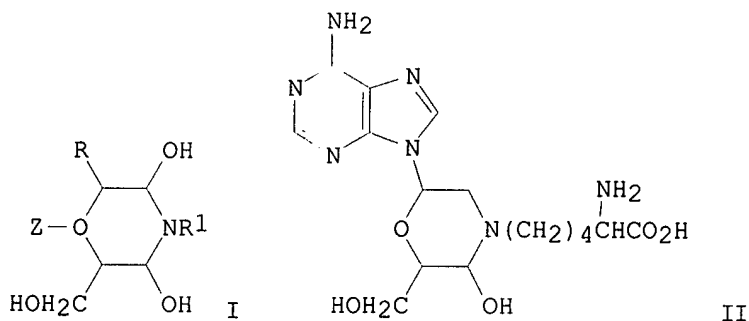


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 91:193337 Nucleic acid base derivatives. Akimoto, Hiroshi;  
Kasai, Yoshio; Nomura, Yasuo (Takeda Chemical Industries, Ltd., Japan).  
Jpn. Kokai Tokkyo Koho JP 54061185 19790517 Showa, 4 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1977-128519 19771025.

GI



AB Title derivs. I [R, R1, Z = adenine-9, (CH2)4CH(NH2)CO2H (Q), O (II);  
hypoxanthine-9, Q, O; adenine-9, C(:NH)NH(CH2)3CH(NH2)CO2H, O; adenine-9,  
Q, CH2; cytosine-1, Q, O] were prepd. by treating OHCCHROCH(CH2OH)CHO with  
lysine or arginine. Anticarcinogenic data of I were given in mice against  
P388 tumor cells. Thus, stirring 1.068 g adenosine and 856 mg NaIO4 1 h  
at room temp. and then treating with 584 mg L-lysine 4 h gave, after  
lyophilization, 1.65 g II.

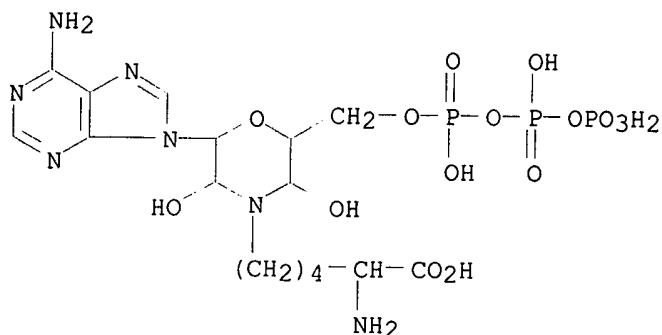
L24 ANSWER 11 OF 14 REGISTRY COPYRIGHT 2002 ACS  
RN 71316-61-5 REGISTRY  
CN 4-Morpholinehexanoic acid, .alpha.-amino-2-(6-amino-9H-purin-9-yl)-3,5-  
dihydroxy-6-(3,5,7,7-tetrahydroxy-3,5,7-trioxido-2,4,6-trioxa-3,5,7-  
triphosphahept-1-yl)-, [2R-[2.alpha.,3.beta.,4(S\*),5.beta.,6.alpha.]]-

Searched by: Mary Hale 308-4258 CM-1 1E01

(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 4-Morpholinehexanoic acid, .alpha.-amino-2-(6-amino-9H-purin-9-yl)-3,5-dihydroxy-6-(3,5,7,7-tetrahydroxy-2,4,6-trioxa-3,5,7-triphosphahept-1-yl)-, P,P',P''-trioxide, [2R-[2.alpha.,3.beta.,4(S\*),5.beta.,6.alpha.]]-  
MF C16 H28 N7 O15 P3  
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 91:119380 Inactivation of phosphofructokinase by dialdehyde-ATP. Gregory, Martha R.; Kaiser, E. T. (Dep. Chem., Univ. Chicago, Chicago, IL, 60637, USA). Arch. Biochem. Biophys., 196(1), 199-208 (English) 1979. CODEN: ABBIA4. ISSN: 0003-9861.

AB Rabbit muscle phosphofructokinase (PFK) was rapidly inactivated by a 2',3'-dialdehyde deriv. of ATP. When allowed to react with 0.6 mM dialdehyde-ATP in 0.1M borate buffer (pH 8.6) contg. 0.2 mM EDTA and 0.5 mM dithiothreitol, PFK lost essentially all activity (99%) in 30 min. The modified PFK remained inactive following dialysis of the reaction mixt. against Na borate (pH 8.0) contg. fructose diphosphate, EDTA, and dithiothreitol. Expts. with 14C-labeled dialdehyde-ATP showed that 99% inactivation of PFK corresponds to incorporation of 3-4 mol of the ATP analog/PFK protomer. The inactivation of PFK with dialdehyde reagent was not caused by disocn. of the 340,000 mol. wt. tetramer to the 170,000 mol. wt. dimer, as detd. by anal. ultracentrifugation. ADP or ATP protected PFK from inactivation by dialdehyde-ATP at pH 8.6, but fructose 6-phosphate, cyclic AMP, or fructose diphosphate, which protect PFK from modification by pyridoxal phosphate, provided little protection from inactivation. Amino acid analyses of dialdehyde-inactivated PFK and of a control sample of the enzyme were compared following reaction of each with 2,4-dinitrofluorobenzene. Three or 4 lysine residues/PFK protomer were modified by dialdehyde-ATP. These lysine residues react with dialdehyde-ATP to form dihydroxymorpholine-like adducts rather than Schiff bases.

L24 ANSWER 12 OF 14 REGISTRY COPYRIGHT 2002 ACS

RN 28032-82-8 REGISTRY

CN Adenine, 9-(3-amino-3-carboxy-3-deoxy-.beta.-D-erythro-pentopyranosyl)-, (3R)- (8CI) (CA INDEX NAME)

FS STEREOSEARCH

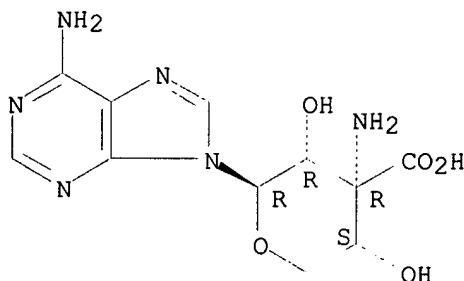
MF C11 H14 N6 O5

LC STN Files: BEILSTEIN\*, CA, CAPLUS

(\*File contains numerically searchable property data)

Searched by: Mary Hale 308-4258 CM-1 1E01

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 72:90794 Syntheses of cyclic .alpha.-amino acids. IV. Syntheses of adenine nucleosides of 3-amino-3-C-carboxy-3-deoxy-D-ribofuranose and 3-amino-3-C-carboxy-3-deoxy-D-ribofuranose. Yanagisawa, Hiroaki; Kinoshita, Mitsuhiro; Nakada, Saburo; Umezawa, Sumio (Fac. Eng., Keio Univ., Tokyo, Japan). Bull. Chem. Soc. Jap., 43(1), 246-52 (English) 1970. CODEN: BCSJA8.

AB 9-(3-Amino-3-C-carboxy-3-deoxy-.beta.-D-ribofuranosyl)adenine (I) and 9-(3-amino-3-C-carboxy-3-deoxy-.beta.-D-ribofuranosyl)adenine (II) were synthesized. They are the first examples of nucleoside-derivs. which have an .alpha.-amino acid structure in their furanose or pyranose ring. A masked deriv. of .alpha.-D-erythro-pentofuranos-3-ulose was converted into a hydantoin deriv. (III), which was acetolyzed and then treated with dry HCl to give an acylglycosyl chloride. Condensation of this deriv. with chloromercuri-6-benzamidopurine followed by hydrolysis afforded I. Treatment of III with methanolic HCl followed by hydrolysis gave methyl 3-amino-3-C-carboxy-3-deoxy-.alpha.-D-ribofuranoside (IV), identical with one of the isomers of methyl 3-amino-3-C-carboxy-3-deoxy-.alpha.-D-pentopyranoside previously reported. The 1-O-acetyl-3-N-benzoyl-2,4-di-O-benzoyl deriv. of the ethyl ester of IV was fused with 6-benzamidopurine in the presence of p-toluenesulfonic acid and followed by hydrolysis to afford II. Structural proofs for the new nucleoside-derivs. were obtained from their uv, ir, and NMR spectra.

L24 ANSWER 13 OF 14 REGISTRY COPYRIGHT 2002 ACS

RN 3477-38-1 REGISTRY

CN Glucopyranuronic acid, 1-(6-amino-9H-purin-9-yl)-1-deoxy-, methyl ester, 2,3,4-triacetate, .beta.-D- (8CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Glucopyranuronic acid, 1-(6-amino-9H-purin-9-yl)-1-deoxy-, methyl ester, 2,3,4-triacetate (7CI)

FS STEREOSEARCH

MF C18 H21 N5 O9

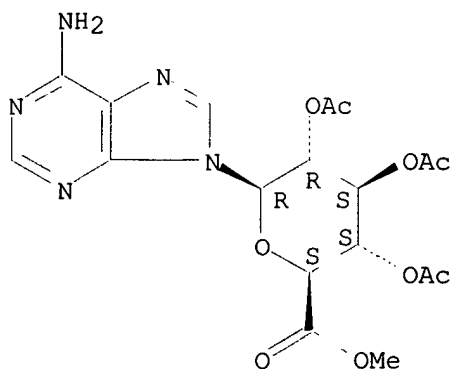
CI COM

LC STN Files: BEILSTEIN\*, CAOLD

(\*File contains numerically searchable property data)

Absolute stereochemistry.

Searched by: Mary Hale 308-4258 CM-1 1E01



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L24 ANSWER 14 OF 14 REGISTRY COPYRIGHT 2002 ACS

RN 3366-21-0 REGISTRY

CN Glucopyranuronic acid, 1-(6-amino-9H-purin-9-yl)-1-deoxy-, methyl ester, 2,3,4-triacetate, picrate, .beta.-D- (8CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Glucopyranuronic acid, 1-(6-amino-9H-purin-9-yl)-1-deoxy-, methyl ester, 2,3,4-triacetate, picrate (7CI)

FS STEREOSEARCH

MF C18 H21 N5 O9 . C6 H3 N3 O7

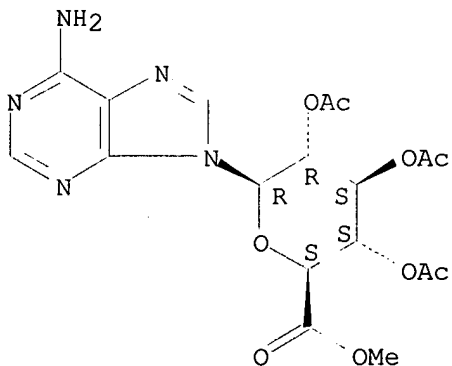
LC STN Files: CAOLD

CM 1

CRN 3477-38-1

CMF C18 H21 N5 O9

Absolute stereochemistry.

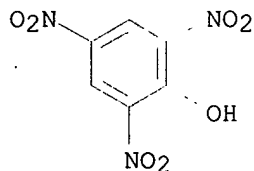


CM 2

CRN 88-89-1

CMF C6 H3 N3 O7

Searched by: Mary Hale 308-4258 CM-1 1E01



1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

|  |            |         |
|--|------------|---------|
| COST IN U.S. DOLLARS                       | SINCE FILE | TOTAL   |
|  | ENTRY      | SESSION |
| FULL ESTIMATED COST                        | 513.85     | 514.06  |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL   |
|  | ENTRY      | SESSION |
| CA SUBSCRIBER PRICE                        | -7.08      | -7.08   |

FILE 'CAOLD' ENTERED AT 14:45:14 ON 15 AUG 2002  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1907-1966  
 FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

L25 1 L24

=> d

*CCC 30(5)  
 /626-34 (1965)*

L25 ANSWER 1 OF 1 CAOLD COPYRIGHT 2002 ACS  
 AN CA63:666f CAOLD  
 TI nucleic acid components and their analogs - (LVIII) 5-azacytidine and related compds.-study of structure, tautomerism, and possibilities of pairing with purine derivs.  
 AU Pithova, Pavla; Piskala, A.; Pitha, J.; Sorm, F.  
 IT 931-86-2 2353-33-5 **3366-21-0** 3366-23-2 3366-24-3  
 3391-65-9 3391-66-0 3391-68-2 3391-71-7 3391-72-8 3391-73-9  
 3391-74-0 **3477-38-1** 3495-99-6 25122-75-2

=> fil hcap;s l24

|  |            |         |
|--|------------|---------|
| COST IN U.S. DOLLARS                       | SINCE FILE | TOTAL   |
|  | ENTRY      | SESSION |
| FULL ESTIMATED COST                        | 0.95       | 515.01  |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL   |

Searched by: Mary Hale 308-4258 CM-1 1E01



CA SUBSCRIBER PRICE

ENTRY      SESSION  
0.00      -7.08

FILE 'HCAPLUS' ENTERED AT 14:45:48 ON 15 AUG 2002  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 15 Aug 2002 VOL 137 ISS 7  
FILE LAST UPDATED: 14 Aug 2002 (20020814/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

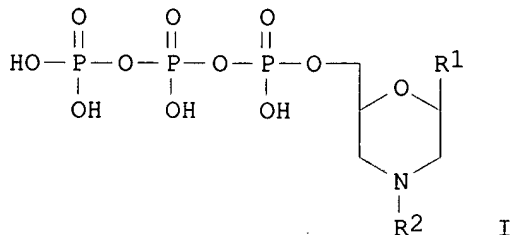
CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

*dupS*  
L26            10 L24

=> d cbib abs

L26 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2002 ACS  
2000:608932 Document No. 133:190215 Methods for making morpholino-nucleotides, and their use for analyzing and marking nucleic acid sequences. Marciacq, Florence; Sauvaigo, Sylvie; Mouret, Jean-Francois; Issartel, Jean-Paul; Molko, Didier (Commissariat A L'Energie Atomique, Fr.; Centre National De La Recherche Scientifique). PCT Int. Appl. WO 2000050626 A1 20000831, 73 pp. DESIGNATED STATES: W: CA, JP, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (French). CODEN: PIXXD2. APPLICATION: WO 2000-FR427 20000221. PRIORITY: FR 1999-2170 19990222; FR 1999-12001 19990927.

GI



AB The invention concerns the use of morpholino-nucleosides of formula (I) wherein: R1 represents a nucleic base and R2 represents a group

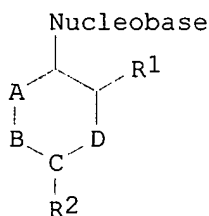
Searched by: Mary Hale 308-4258 CM-1 1E01

corresponding to the following formulas:  $-(CH_2)_n-NH_2$ ,  $-(CH_2)_n-SH$ ,  $-(CH_2)_n-COOH$ ,  $-(CH_2)_n-OH$ ,  $-(CH_2)_n-NH-R_3$ ,  $(CH_2)_n-SR_3-(CH_2)_n-CO-R_3$ ,  $-(CH_2)_n-OR_3$  wherein: n is an integer ranging from 1 to 12 and R3 is a group derived from a marker, a protein, an enzyme, a fatty acid or a peptide, as chain terminators in a DNA or RNA sequencing process by Sanger method, or for marking DNA or RNA fragments.

=> d cbib abs 2-10

L26 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2002 ACS  
1999:222922 Document No. 130:252610 Method for producing cyclohexyl and heterocyclyl nucleoside derivs. and oligomers and their use in pairing or testing systems. Miculka, Christian; Windhab, Norbert; Eschenmoser, Albert; Scherer, Stefan; Quinkert, Gerhard (Aventis Research & Technologies G.m.b.H. & Co. K.-G., Germany). PCT Int. Appl. WO 9915509 A2 19990401, 43 pp. DESIGNATED STATES: W: AU, BR, CA, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1998-EP6002 19980921. PRIORITY: DE 1997-19741739 19970922.

GI



I

AB The invention relates to a compd. of formula (I), wherein R1 is NR3R4, OR3 or SR3 with R3 and R4 being H or CnH2n+1 independently of each other and being the same or different, n being a whole no. from 1 to 12; R2 is equal to CmH2m-C(X)-Y with X being =O, =S or =N, Y being equal to OR3, NR3R4 or SR3, R3 and R4 having the same meaning given above, and m being a whole no. from 1 to 4; or R2 is equal to CmH2m-Z-Y' with Z being a sulfonyl, phosphonyl, ether or amine group, Y' being equal to H, CnH2n+1, OR3, NR3R4 or SR3 then Z is sulfonyl or phosphonyl group, n, R3 and R4 having the meaning given above, and Y' being equal to CnH2n+1 when Z is an ether or an amine group; A, B, and D are the same or different and mean CR5R6, O, NR7 or S independently of each other with R5, R6 and R7 being H or CnH2n+1, independently of each other, n having the meaning given above; and C is equal to CR8 or N with R8 having the meaning of R5 independently, A-B, B-C or C-D not being two identical hetero-atoms; and nucleobase means thymine, uracil, adenine, cytosine, guanine, iso-cytosine, iso-guanine, xanthine or hypoxanthine. The invention also relates to a method for producing these derivs. and to their use in pairing and/or testing systems. These compds. are of interest because they form the building units of cyclohexylnucleooligoamides (CNAs), which have the ability to base-pair with natural DNAs or RNAs, without the steric considerations posed by the ribo- or deoxy-ribo-furan rings of natural (deoxy)nucleic acids. Thus, (S,S,S)-2-iodo-8-aza[3.3.1]nonan-7-one was reacted with 3-(benzyloxy)methyl-thymine, to yield, after a series of protection/deprotection steps, I [A, B, D = CH2; C = (S)-CH; Nucleobase = thymine; R1 = (S)-BOC-NH; R2 = (S)-CH2CO2H (II)]. Using II and the adenine-base equiv., CNAs up to hexamers were synthesized using solid-phase techniques, and their self-complimentary base-pairing strength was measured.

Searched by: Mary Hale 308-4258 CM-1 1E01

L26 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2002 ACS

1998:628041 Document No. 130:1269 Polyclonal Antibodies to Adenine N1-Oxide: Characterization and Use for the Measurement of DNA Damage. Signorini, Nathalie; Molko, Didier; Cadet, Jean (Departement de Recherche Fondamentale sur la Matiere Condensee Service de Chimie Inorganique et Biologique Laboratoire des Lesions des Acides Nucleiques, CEA/Grenoble, Grenoble, F-38054, Fr.). Chemical Research in Toxicology, 11(10), 1169-1175 (English) 1998. CODEN: CRTOEC. ISSN: 0893-228X. Publisher: American Chemical Society.

AB Adenine N1-oxide is a DNA lesion whose formation involves the specific oxidn. of the adenine base by hydrogen peroxide under nonradical conditions. The damage may be measured using a HPLC/32P-postlabeling method, which however cannot be used for routine anal. We propose herein as an alternative an immunol. assay which allows a rapid evaluation of the level of adenine N1-oxide in DNA exposed to oxidative stress. Two polyclonal antibodies were raised using two different strategies for the coupling of the hapten to the protein. The first approach is based on the universal method of Erlanger and Beiser, whereas the prepn. of the second antigen involves the conjugation of a morpholino deriv. of adenosine N1-oxide to the carrier protein. The affinity and the specificity of those antibodies were detd. by competitive ELISA. The antibody obtained by the traditional method shows some cross-reactivity with normal nucleotides, whereas for the other antiserum, the selectivity was found to be higher. Therefore, this polyclonal antibody was used to quantify the level of adenine N1-oxide in calf thymus DNA oxidized either by m-chloroperbenzoic acid or by hydrogen peroxide. The detection limit of the assay is four residues of adenine N1-oxide per 106 normal bases. The level of adenine N1-oxide in nonmodified DNA was lower than the detection limit of the assay, whereas in mCPB- and H2O2-modified DNA, it could be up to 14 and 0.7 adenine N1-oxide residues per 104 normal bases, resp.

L26 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2002 ACS

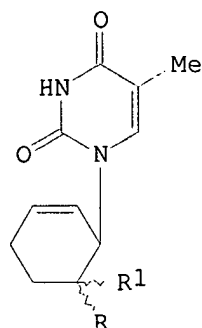
1997:253945 Document No. 126:277684 Synthesis and Conformational Study of 3-Hydroxy-4-(Hydroxymethyl)-1-Cyclohexanyl Purines and Pyrimidines. Maurinsh, Yuris; Schraml, Jan; De Winter, Hans; Blaton, Norbert; Peeters, Oswald; Lescrinier, Eveline; Rozenski, Jef; Van Aerschot, Arthur; De Clercq, Erik; Busson, Roger; Herdewijn, Piet (Rega Institute for Medical Research, Louvain, B-3000, Belg.). Journal of Organic Chemistry, 62(9), 2861-2871 (English) 1997. CODEN: JOCEAH. ISSN: 0022-3263. Publisher: American Chemical Society.

AB The cyclohexane nucleosides with a 1,4-relationship between nucleoside base and hydroxymethyl moiety were synthesized using a conjugated addn. reaction of the nucleobases to Et 1,3-cyclohexadiene-1-carboxylate and hydroboration of the cyclohexenyl precursor. The lack of antiviral activity of the compds. was correlated with the conformation of these nucleosides as deduced from NMR and X-ray anal.

L26 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2002 ACS

1994:77582 Document No. 120:77582 Cyclohexenyl nucleosides and related compounds. Arango, J. H.; Geer, A.; Rodriguez, J.; Young, P. E.; Scheiner, P. (York Coll., City Univ. New York, Jamaica, NY, 11451, USA). Nucleosides Nucleotides, 12(7), 773-84 (English) 1993. CODEN: NUNUD5. ISSN: 0732-8311. OTHER SOURCES: CASREACT 120:77582.

GI



AB Cis and trans-1-(4-hydroxy-2-cyclohexenyl)- and 1-(2-hydroxy-5-cyclohexenyl)thymines, e.g. I (R = H, R1 = OH) (II), were obtained by stereospecific routes. Oxidn. of II afforded I (RR1 = O), the carbocyclic analog of a reportedly antiviral ketopyranosyl nucleoside. Michael-type addn. provided a direct route to 3-oxocycloalkyl nucleosides, and lactone nucleosides resulted from addn. of bases to .alpha.-methylene-.gamma.-butyrolactone. Anti-HIV screening (no data) revealed no activity for the new compds.

L26 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2002 ACS

1985:610401 Document No. 103:210401 Reductive alkylation with oxidized nucleotides. Use in affinity labeling or affinity chromatography. Rayford, Richard; Anthony, Donald D., Jr.; O'Neill, Robert E., Jr.; Merrick, William C. (Sch. Med., Case Western Reserve Univ., Cleveland, OH, 44106, USA). J. Biol. Chem., 260(29), 15708-13 (English) 1985. CODEN: JBCHA3. ISSN: 0021-9258.


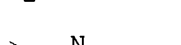
AB A study was made of the products of a reaction of oxidized ribonucleotides with a primary amine. As a model reaction, IO4--oxidized adenosine was combined with glycine in the presence of NaCNBH3. The purified major product of this reaction, adenine 9,2'-(4'-carboxymethyl-6'-hydroxymethylmorpholine), was characterized by 13C and 1H NMR spectroscopy, UV spectroscopy, and TLC. When used to generate affinity columns, oxidized adenosine or oxidized ATP formed stable products with immobilized diaminoethane when treated with NaCNBH3. Failure to treat with NaCNBH3 yielded an unstable affinity matrix. These results are used in the interpretation of differing results when oxidized nucleotides have been used as affinity labels for different proteins.

L26 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2002 ACS

1983:121988 Document No. 98:121988 Affinity labeling of nicotinamide adenine dinucleotide-dependent isocitrate dehydrogenase by the 2',3'-dialdehyde derivative of adenosine 5'-diphosphate. Evidence for the formation of an unusual reaction product. King, Marita M.; Colman, Roberta F. (Dep. Chem., Univ. Delaware, Newark, DE, 19711, USA). Biochemistry, 22(7), 1656-65 (English) 1983. CODEN: BICHAW. ISSN: 0006-2960.

AB Modification of pig heart NAD-dependent isocitrate dehydrogenase (I) by the 2',3'-dialdehyde deriv. of ADP (II) resulted in a time-dependent inactivation of the enzyme. Two kinetically distinct phases were obsd. for the loss in I activity with max. rate consts. of 0.38 and 0.023 min<sup>-1</sup>, at satg. concns. of II, at pH 7.0 and in the presence of 2.0 mM MnSO4. The Ki values for both phases of the reaction were very similar; an av. of 22.9 .mu.M for free II was obtained with consts. detd. in the presence of 0.2, 0.3, and 2.0 mM MnSO4. At pH 7.0 and in the presence of Mn2+, almost complete protection of I from inactivation by II was provided by ADP and isocitrate, whereas only partial protection was afforded by NADH and ATP; NAD was without effect. Only the protection by ADP was consistent with

L26 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2002 ACS  
1979:593337 Document No. 91:193337 Nucleic acid base derivatives. Akimoto,  
Hiroshi; Kasai, Yoshio; Nomura, Yasuo (Takeda Chemical Industries, Ltd.,  
Japan). Jpn. Kokai Tokkyo Koho JP 54061185 19790517 Showa, 4 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1977-128519 19771025.

L26 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2002 ACS  
1979:519380 Document No. 91:119380 Inactivation of phosphofructokinase by  
dialdehyde-ATP. Gregory, Martha R.; Kaiser, E. T. (Dep. Chem., Univ.  
Chicago, Chicago, IL, 60637, USA). Arch. Biochem. Biophys., 196(1),  
199-208 (English) 1979. CODEN: ABBIA4. ISSN: 0003-9861.

Searched by: Mary Hale 308-4258 CM-1 1E01

not caused by disocn. of the 340,000 mol. wt. tetramer to the 170,000 mol. wt. dimer, as detd. by anal. ultracentrifugation. ADP or ATP protected PFK from inactivation by dialdehyde-ATP at pH 8.6, but fructose 6-phosphate, cyclic AMP, or fructose diphosphate, which protect PFK from modification by pyridoxal phosphate, provided little protection from inactivation. Amino acid analyses of dialdehyde-inactivated PFK and of a control sample of the enzyme were compared following reaction of each with 2,4-dinitrofluorobenzene. Three or 4 lysine residues/PFK protomer were modified by dialdehyde-ATP. These lysine residues react with dialdehyde-ATP to form dihydroxymorpholine-like adducts rather than Schiff bases.

L26 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2002 ACS

1970:90794 Document No. 72:90794 Syntheses of cyclic .alpha.-amino acids. IV. Syntheses of adenine nucleosides of 3-amino-3-C-carboxy-3-deoxy-D-ribofuranose and 3-amino-3-C-carboxy-3-deoxy-D-ribofuranose. Yanagisawa, Hiroaki; Kinoshita, Mitsuhiro; Nakada, Saburo; Umezawa, Sumio (Fac. Eng., Keio Univ., Tokyo, Japan). Bull. Chem. Soc. Jap., 43(1), 246-52 (English) 1970. CODEN: BCSJA8.

AB 9-(3-Amino-3-C-carboxy-3-deoxy-.beta.-D-ribofuranosyl)adenine (I) and 9-(3-amino-3-C-carboxy-3-deoxy-.beta.-D-ribofuranosyl)adenine (II) were synthesized. They are the first examples of nucleoside-derivs. which have an .alpha.-amino acid structure in their furanose or pyranose ring. A masked deriv. of .alpha.-D-erythro-pentofuranos-3-ulose was converted into a hydantoin deriv. (III), which was acetolyzed and then treated with dry HCl to give an acylglycosyl chloride. Condensation of this deriv. with chloromercuri-6-benzamidopurine followed by hydrolysis afforded I. Treatment of III with methanolic HCl followed by hydrolysis gave methyl 3-amino-3-C-carboxy-3-deoxy-.alpha.-D-ribofuranoside (IV), identical with one of the isomers of methyl 3-amino-3-C-carboxy-3-deoxy-.alpha.-D-pentopyranoside previously reported. The 1-O-acetyl-3-N-benzoyl-2,4-di-O-benzoyl deriv. of the ethyl ester of IV was fused with 6-benzamidopurine in the presence of p-toluenesulfonic acid and followed by hydrolysis to afford II. Structural proofs for the new nucleoside-derivs. were obtained from their uv, ir, and NMR spectra.

=> fil reg

COST IN U.S. DOLLARS

| SINCE FILE | TOTAL   |
|------------|---------|
| ENTRY      | SESSION |
| 25.03      | 540.04  |

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

| SINCE FILE | TOTAL   |
|------------|---------|
| ENTRY      | SESSION |
| -6.20      | -13.28  |

CA SUBSCRIBER PRICE

FILE 'REGISTRY' ENTERED AT 14:46:18 ON 15 AUG 2002

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2002 American Chemical Society (ACS)

STRUCTURE FILE UPDATES: 14 AUG 2002 HIGHEST RN 443957-06-0

DICTIONARY FILE UPDATES: 14 AUG 2002 HIGHEST RN 443957-06-0

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES

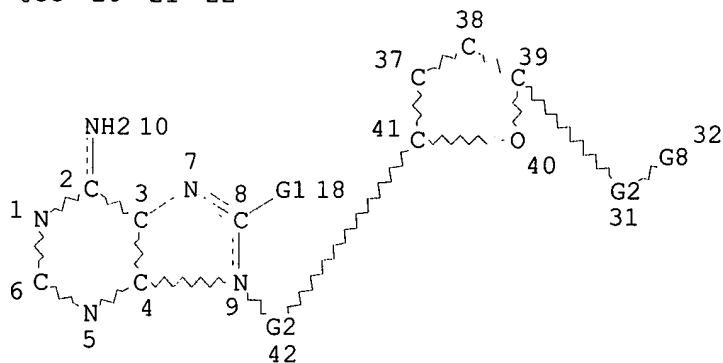
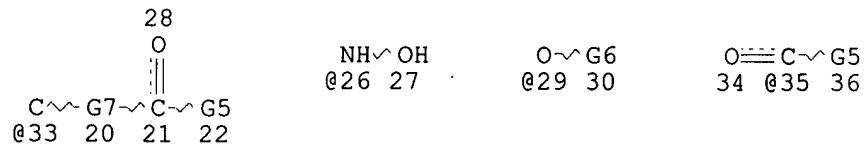
Searched by: Mary Hale 308-4258 CM-1 1E01

*broad search*

for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d l44 que stat

L10 SCR 1840  
 L12 SCR 1841  
 L31 STR

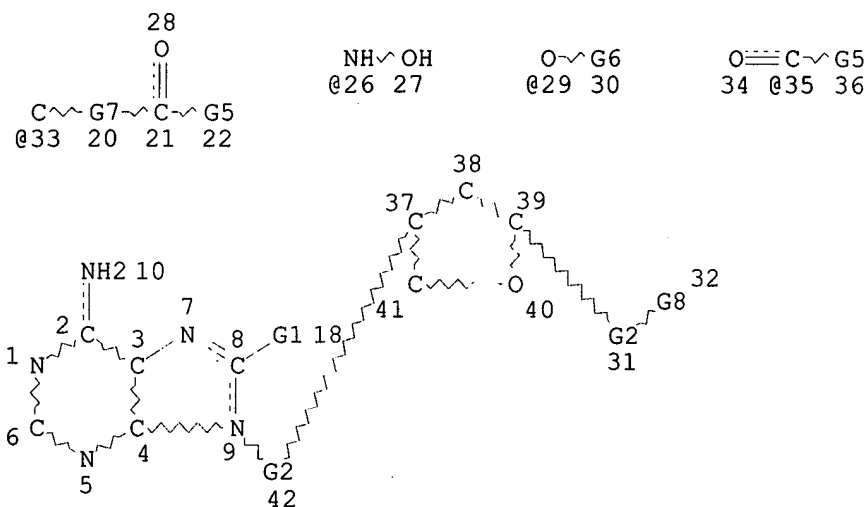


*search is for broad*

VAR G1=H/ME  
 REP G2=(0-10) A  
 VAR G5=26/OH/29  
 VAR G6=C/SI  
 REP G7=(0-3) CH2  
 VAR G8=33/35  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 31

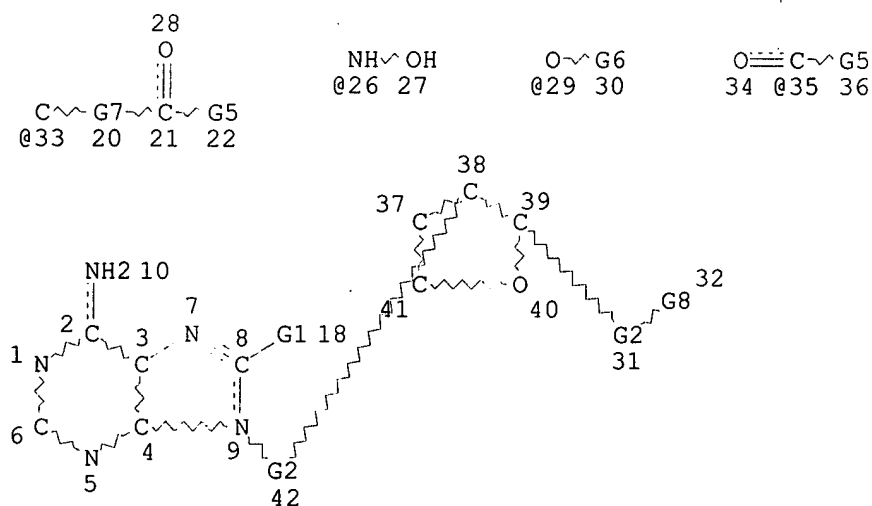
STEREO ATTRIBUTES: NONE  
 L32 STR



VAR G1=H/ME  
 REP G2=(0-10) A  
 VAR G5=26/OH/29  
 VAR G6=C/SI  
 REP G7=(0-3) CH2  
 VAR G8=33/35  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE  
 L33 STR



VAR G1=H/ME  
 REP G2=(0-10) A  
 VAR G5=26/OH/29  
 VAR G6=C/SI  
 REP G7=(0-3) CH2

Searched by: Mary Hale 308-4258 CM-1 1E01



VAR G8=33/35  
NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE  
L35 1762 SEA FILE=REGISTRY SSS FUL L33 OR L32 OR L31  
L36 STR

C<sup>~</sup>CH<sub>2</sub>-OH  
3 1 2

NODE ATTRIBUTES:  
NSPEC IS R AT 3  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 3

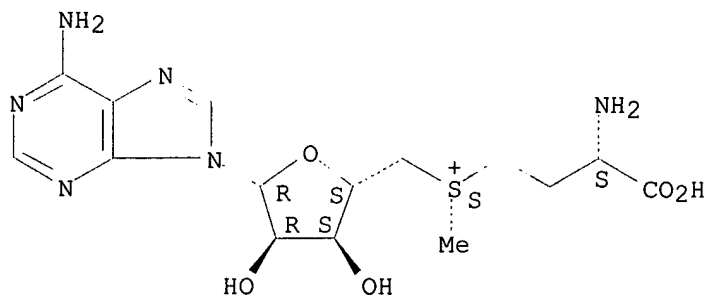
STEREO ATTRIBUTES: NONE  
L37 20 SEA FILE=REGISTRY SUB=L35 SSS FUL L36  
L38 1742 SEA FILE=REGISTRY ABB=ON PLU=ON L35 NOT L37  
L39 1742 SEA FILE=REGISTRY SUB=L38 SSS FUL L10  
L40 798 SEA FILE=REGISTRY SUB=L39 SSS FUL L12  
L41 944 SEA FILE=REGISTRY ABB=ON PLU=ON L39 NOT L40  
L42 SCR 2016  
L43 156 SEA FILE=REGISTRY SUB=L41 SSS FUL L42  
L44 788 SEA FILE=REGISTRY ABB=ON PLU=ON L41 NOT L43

=> d scan

L44 788 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
IN Adenosine, 5'-[(S)-[(3S)-3-amino-3-carboxypropyl)methylsulfonio]-5'-deoxy-  
, 2-naphthalenesulfonate (salt) (9CI)  
MF C15 H23 N6 O5 S . C10 H7 O3 S

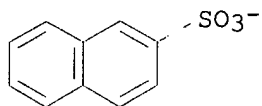
CM 1

Absolute stereochemistry.



CM 2

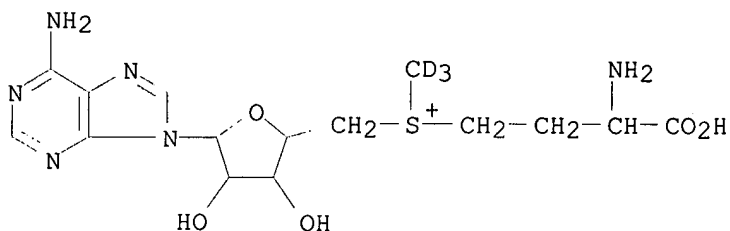
Searched by: Mary Hale 308-4258 CM-1 1E01



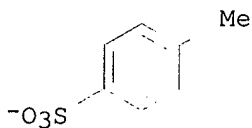
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):.

L44 788 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN Adenosine, 5'-[[ (3S)-3-amino-3-carboxypropyl]methyl-d3-sulfonio]-5'-deoxy-  
 , salt with 4-methylbenzenesulfonic acid (1:1) (9CI)  
 MF C15 H20 D3 N6 O5 S . C7 H7 O3 S  
 CI COM

CM 1



CM 2



HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> search

ENTER LOGIC EXPRESSION, QUERY NAME, OR (END):l15

ENTER TYPE OF SEARCH (SSS), CSS, FAMILY, OR EXACT:.

ENTER SCOPE OF SEARCH (SAMPLE), FULL, RANGE, OR SUBSET:subset

ENTER SUBSET L# OR (END):l44

ENTER SUBSET SEARCH SCOPE - SAMPLE, FULL, RANGE, OR (END):ful

FULL SUBSET SEARCH INITIATED 15:01:31

FULL SUBSET SCREEN SEARCH COMPLETED

334 ANSWERS

SEARCH TIME: 00.00.01

L45 334 SEA SUB=L44 SSS FUL L15

=> s l44 not l45

L46 454 L44 NOT L45

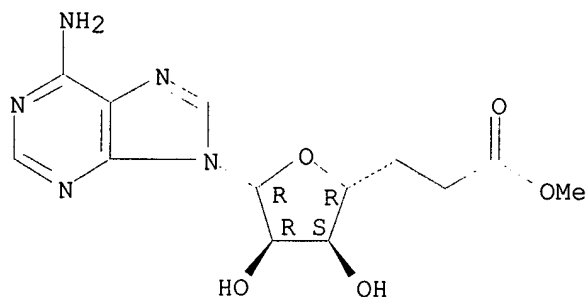
=> d scan

L46 454 ANSWERS REGISTRY COPYRIGHT 2002 ACS

Searched by: Mary Hale 308-4258 CM-1 1E01

IN .beta.-D-ribo-Heptofuranuronic acid, 1-(6-amino-9H-purin-9-yl)-1,5,6-  
trideoxy-, methyl ester (9CI)  
MF C13 H17 N5 O5

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

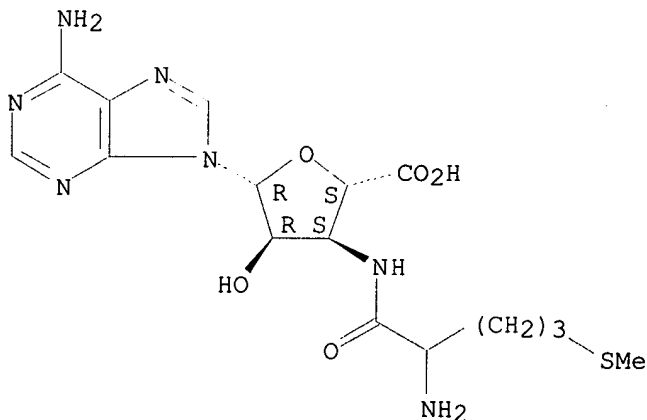
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):.

L46 454 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN .beta.-D-Ribofuranuronic acid, 3-[[2-amino-5-(methylthio)-1-  
oxopentyl]amino]-1-(6-amino-9H-purin-9-yl)-1,3-dideoxy- (9CI)

MF C16 H23 N7 O5 S

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):.

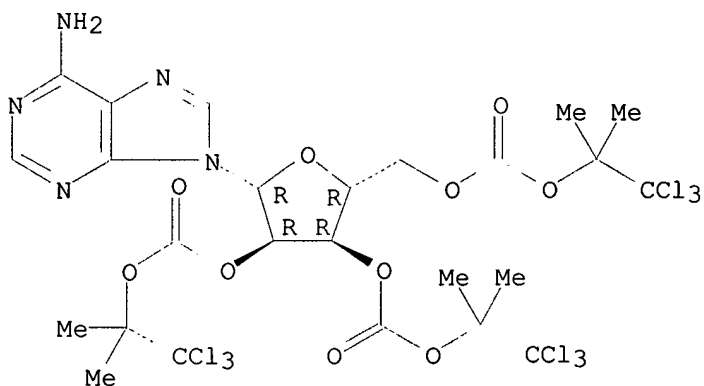
L46 454 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN Adenosine, 2',3',5'-tris(2,2,2-trichloro-1,1-dimethylethyl carbonate)  
(9CI)

MF C25 H28 Cl9 N5 O10

Absolute stereochemistry.

Searched by: Mary Hale 308-4258 CM-1 1E01



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

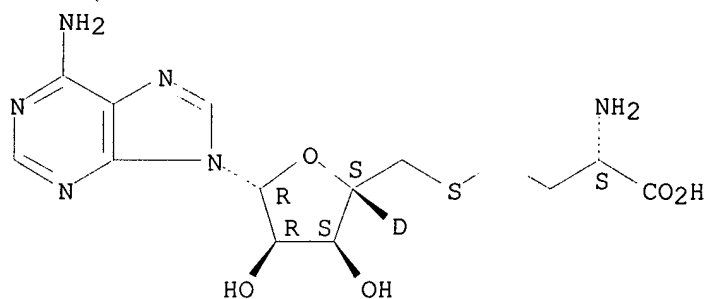
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):.

L46 454 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN Adenosine-4'-C-d, 5'-S-(3-amino-3-carboxypropyl)-5'-thio-, (S)- (9CI)

MF C14 H19 D N6 O5 S

Absolute stereochemistry.



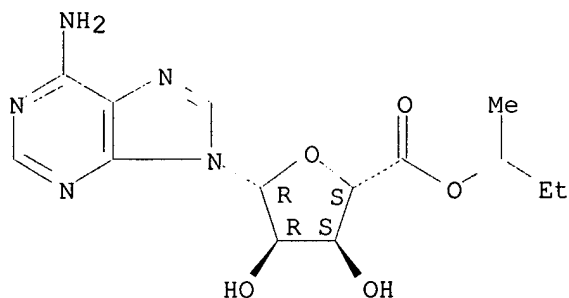
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):.

L46 454 ANSWERS REGISTRY COPYRIGHT 2002 ACS

IN .beta.-D-Ribofuranuronic acid, 1-(6-amino-9H-purin-9-yl)-1-deoxy-,  
1-methylpropyl ester (9CI)

MF C14 H19 N5 O5

Absolute stereochemistry.

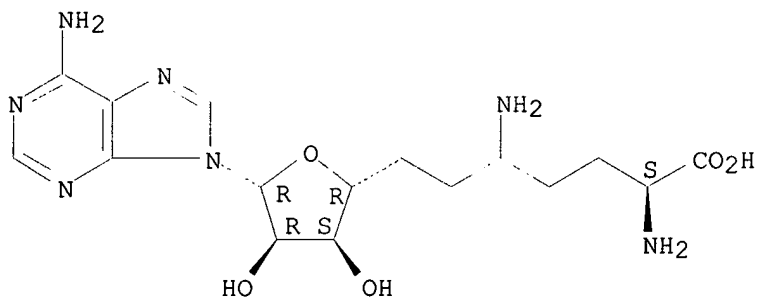


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):.

L46 454 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN .beta.-D-allo-Undecofuranuronic acid, 7,10-diamino-1-(6-amino-9H-purin-9-yl)-1,5,6,7,8,9,10-heptadeoxy-, (7.xi.)- (9CI)  
 MF C16 H25 N7 O5

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> fil hcap;s l46  
 COST IN U.S. DOLLARS  
 FULL ESTIMATED COST

|            |         |
|------------|---------|
| SINCE FILE | TOTAL   |
| ENTRY      | SESSION |
| 462.03     | 1002.07 |

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)  
 CA SUBSCRIBER PRICE

|            |         |
|------------|---------|
| SINCE FILE | TOTAL   |
| ENTRY      | SESSION |
| 0.00       | -13.28  |

FILE 'HCAPLUS' ENTERED AT 15:02:10 ON 15 AUG 2002  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

Searched by: Mary Hale 308-4258 CM-1 1E01

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 15 Aug 2002 VOL 137 ISS 7  
FILE LAST UPDATED: 14 Aug 2002 (20020814/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

L47 3843 L46

=> fil reg;save l46 berch/a

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST  | 2.14             | 1004.21       |

| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
|--|------------------|---------------|
| CA SUBSCRIBER PRICE                        | 0.00             | -13.28        |

FILE 'REGISTRY' ENTERED AT 15:02:31 ON 15 AUG 2002  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2002 American Chemical Society (ACS)

STRUCTURE FILE UPDATES: 14 AUG 2002 HIGHEST RN 443957-06-0  
DICTIONARY FILE UPDATES: 14 AUG 2002 HIGHEST RN 443957-06-0

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

'BERCH/A' CANNOT BE USED BECAUSE 'BERCH/Q' IS ALREADY SAVED  
A saved item (query, answer set, L# list, BATCH search request, or SDI profile) cannot be replaced by an item of a different type by entering the same name with a different qualifier (/Q, /A, or /L). If you wish to reuse this name, use the DELETE command to remove the old

Searched by: Mary Hale 308-4258 CM-1 1E01

definition. Then reissue the SAVE command.

=> dis save

| NAME      | CREATED     | NOTES/TITLE                    |
|-----------|-------------|--------------------------------|
| BERCH/Q   | 20 JUN 2002 | STRUCTURE                      |
| SPIVACK/A | 29 JUL 2002 | 12915 ANSWERS IN FILE REGISTRY |
| TEST/Q    | 24 JUL 2002 | STRUCTURE                      |

=> del berch/q

DELETE BERCH/Q? (Y)/N:y

=> save 146 berch/a

ANSWER SET L46 HAS BEEN SAVED AS 'BERCH/A'